

We claim:

1. A method for exporting at least a portion of a relational database to an XML document, comprising the steps of:
  - 5 obtaining an initial view query that defines an XML view on a relational database and an XSLT stylesheet specifying at least one transformation;  
modifying said initial view query to account for an effect of said at least one transformation; and  
applying said modified view query to said relational database to obtain said  
10 XML document.
2. The method of claim 1, wherein said XSLT stylesheet is based on a restrictive subset of XSLT.
- 15 3. The method of claim 1 further comprising the steps of generating a first graph representing processing done by said XSLT stylesheet; and combining said first graph with a second graph representing said initial view query by matching pairs of nodes from the first and second graphs.
- 20 4. The method of claim 3, wherein said combined graph is a context transition graph for an XSLT stylesheet executed on said initial view query.
5. The method of claim 4, wherein said context transition graph captures context transitions that occur when evaluating said XSLT stylesheet on said XML  
25 document produced by said initial view query.
6. The method of claim 3, further comprising the steps of pruning said combined graph to remove unnecessary nodes; and modifying said combined graph to produce a modified view query that handles formatting instructions.
- 30 7. The method of claim 6, further comprising the step of generating a traverse view query from a context transition graph prior to generating said modified view query,

said traverse view query capturing traversal actions of said XSLT stylesheet on said XML document produced by said initial view query.

8. The method of claim 6, wherein said formatting instructions are expressed  
5 as output tag trees for each node in said traverse view query; and further comprising the step of combining said output tag trees and said traverse view query to generate said modified view query.

9. The method of claim 1, wherein said obtained XML document is  
10 substantially similar to a second XML document produced by applying said XSLT stylesheet on said XML document produced by said initial view query.

10. A method for generating a modified view query of an XML document,  
comprising the step of:  
15 composing an XSLT stylesheet with an XML view on a relational database to produce said modified view query.

11. The method of claim 10, further comprising the steps of generating a first  
graph representing processing done by said XSLT stylesheet; and combining said first  
20 graph with a second graph representing an initial view query that defines said XML view on said relational database by matching pairs of nodes from the first and second graphs.

12. The method of claim 11, wherein said combined graph is a context  
transition graph for an XSLT stylesheet executed on said initial view query.  
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13. The method of claim 12, wherein said context transition graph captures  
context transitions that occur when evaluating said XSLT stylesheet on said XML  
document produced by said initial view query.

30 14. The method of claim 11, wherein said context transition graph includes selecting and matching transformations from said XSLT stylesheet.

15. The method of claim 11, further comprising the steps of pruning said combined graph to remove unnecessary nodes; and modifying said combined graph to produce a modified view query that handles formatting instructions.

5 16. The method of claim 15, further comprising the step of generating a traverse view query from a context transition graph prior to generating said modified view query, said traverse view query capturing traversal actions of said XSLT stylesheet on said XML document produced by said initial view query.

10 17. The method of claim 15, wherein said formatting instructions are expressed as output tag trees for each node in said traverse view query; and further comprising the step of combining said output tag trees and said traverse view query to generate said modified view query.

15 18. The method of claim 10, wherein an obtained XML document is substantially similar to a second XML document produced by applying said XSLT stylesheet on said XML document produced by said initial view query.

20 19. A method for generating a modified view query of an XML document, comprising the steps of:

generating a first graph representing processing done by an XSLT stylesheet;

25 combining said first graph with a second graph representing a view query that defines an XML view on a relational database by matching pairs of nodes from the first and second graphs;

pruning said combined graph to remove unnecessary nodes; and  
modifying said combined graph to produce said modified view query that handles formatting instructions.

30 20. The method of claim 19, wherein said combined graph is a context transition graph for an XSLT stylesheet executed on an initial view query that defines an XML view on a relational database.

21. The method of claim 20, wherein said context transition graph captures context transitions that occur when evaluating said XSLT stylesheet on said XML document produced by said initial view query.

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22. The method of claim 20, further comprising the step of generating a traverse view query from said context transition graph prior to generating said modified view query, said traverse view query capturing traversal actions of said XSLT stylesheet on said XML document produced by said initial view query.

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23. The method of claim 20, wherein said formatting instructions are expressed as output tag trees for each node in said traverse view query; and further comprising the step of combining said output tag trees and said traverse view query to generate said modified view query.

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24. A system for exporting at least a portion of a relational database to an XML document, comprising:

a memory; and

at least one processor, coupled to the memory, operative to:

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obtain an initial view query that defines an XML view on a relational database and an XSLT stylesheet specifying at least one transformation;

modify said initial view query to account for an effect of said at least one transformation; and

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apply said modified view query to said relational database to obtain said XML document.

25. The system of claim 24, wherein said XSLT stylesheet is based on a restrictive subset of XSLT.

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26. The system of claim 24, wherein said processor is further operative to generate a first graph representing processing done by said XSLT stylesheet; and combine

said first graph with a second graph representing said initial view query by matching pairs of nodes from the first and second graphs.

27. The system of claim 26, wherein said combined graph is a context  
5 transition graph for an XSLT stylesheet executed on said initial view query.

28. The system of claim 27, wherein said context transition graph captures  
context transitions that occur when evaluating said XSLT stylesheet on said XML  
document produced by said initial view query.

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29. The system of claim 26, wherein said processor is further operative to  
prune said combined graph to remove unnecessary nodes; and modify said combined  
graph to produce a modified view query that handles formatting instructions.

15 30. The system of claim 29, wherein said processor is further configured to  
generate a traverse view query from a context transition graph prior to generating said  
modified view query, said traverse view query capturing traversal actions of said XSLT  
stylesheet on said XML document produced by said initial view query.

20 31. The system of claim 29, wherein said formatting instructions are expressed  
as output tag trees for each node in said traverse view query; and further comprising the  
step of combining said output tag trees and said traverse view query to generate said  
modified view query.

25 32. The system of claim 24, wherein said obtained XML document is  
substantially similar to a second XML document produced by applying said XSLT  
stylesheet on said XML document produced by said initial view query.